

IN THE CLAIMS

1. (previously amended) A system comprising a power source and a driving motor, the power source for supplying electrical power to the driving motor, said driving motor drawing electrical power at different rates, the power source comprising:

a first rechargeable energy battery having a first total impedance for storing electrical energy and providing electrical power to the driving motor at a first range of power rates;

a second rechargeable power battery having a second total impedance, less than the first total impedance, for storing electrical energy and providing electrical power to the driving motor at a second range of power rates;

wherein electrical energy stored in the energy battery is provided to the driving motor in combination with electrical energy stored in the power battery; and

wherein the energy battery substantially continuously recharges the power battery with any excess power.

2. (original) The power source as defined in claim 1 further comprising a battery controller capable of controlling the substantially continuous recharging of the power battery with electrical energy from the energy battery not required by the driving motor.

3. (original) The power source as defined in claim 2 wherein the battery controller controls the substantially continuous recharging of the power battery by controlling the electrical energy passing through a first connection from the energy battery to the power battery.

4. (original) The power source as defined in claim 2 wherein the battery controller utilizes inherent control of the energy battery and power battery, such that the battery controller initially connects the power battery and energy battery in parallel.

5. (previously amended) The power source as defined in claim 4 wherein the controller initially connects each of the power battery, energy battery and driving motor in parallel.

6. (original) The power source as defined in claim 1 wherein the power battery and energy battery have a range of overlapping nominal voltages.
7. (original) The power source as defined in claim 6 wherein the power battery and energy battery are connected in parallel with the driving motor.
8. (original) The power source as defined in claim 7 wherein the power battery consists of at least one bank of 8 lead acid batteries in series, each lead acid battery having a nominal voltage of 10.5 volts to 13 volts and the energy battery consists of at least one bank of 27 lithium ion cells connected in series, each lithium ion cell having a nominal voltage of 3 volts to 4.2 volts.
9. (original) The power source as defined in claim 1 wherein the second total impedance is between 10% to 60% of the first total impedance.
10. (original) The power source as defined in claim 9 wherein the second total impedance is between 35% to 50% of the first total impedance.
11. (original) The power source as defined in claim 4 further comprising a switch between the energy battery and the power battery; and
wherein the controller initially connects the power battery to the energy battery in parallel by controlling the switch along the first connection.
12. (original) The power source as defined in claim 1 wherein the energy battery is a lithium based battery selected from the group consisting of non-aqueous lithium-ion batteries, lithium air batteries and polymer lithium ion batteries, and, the power battery is a lead-acid battery.
13. (original) The power source as defined in claim 1 wherein the energy battery is a non-aqueous polymer lithium battery pack.

14. (original) The power source as defined in claim 13 wherein the power source has a casing and a portion of the casing is occupied by the non-aqueous polymer lithium battery pack.

15. (previously amended) The power source as defined in claim 5 wherein the driving motor drives the vehicle and, wherein the controller can be contained within or removed from the vehicle.

16. (cancelled)

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27. (cancelled)

28. (previously amended) A method for storing electrical energy for an electrical load drawing electrical power at different rates, said method comprising the steps of:

charging a non-portable rechargeable energy battery having a first total impedance;
charging a rechargeable power battery having a second total impedance, less than the first total impedance;

supplying electrical energy from the energy battery and the power battery to the electrical load;

substantially continuously recharging the power battery from the energy battery with electrical energy not required by the electrical load.

29. (previously amended) A method as defined in claim 28 further comprising the further step of:

securing the non-portable rechargeable energy batter to an electric vehicle.

30. (previously amended) A method as defined in claim 29 wherein the electrical load is a driving motor in the vehicle, and, the rechargeable energy battery and the rechargeable power battery are contained in the vehicle.

31. (original) A method as defined in claim 30 further comprising:
periodically recharging the energy battery, from an external fixed electrical source, when the energy capacity of the energy battery falls below a threshold.

32. (previously amended) A method as defined in claim 28 wherein the rechargeable energy battery is selected from the group consisting of non-aqueous lithium-ion batteries, lithium air batteries, polymer lithium-ion batteries and sodium-sulfur batteries.

33. (cancelled)

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46. (cancelled)

47. (previously amended) A vehicle comprising:
a vehicle housing;
a motor structured and located so that operation of the motor can drive the vehicle into motion;
a first battery having a first energy density, with the first battery being rechargeable;
a second battery having a second energy density, with the second energy density being greater than the first energy density; and
a battery connection device structured and located to electrically connect at least the first battery to the motor and the second battery;
wherein the motor, the first battery and the second battery are all fixed to the vehicle housing so that the first battery is spatially proximate to the motor and the second battery is spatially remote from the motor.
48. (previously amended) The vehicle of claim 47 wherein:
the first battery comprises at least two separate battery housings electrically connected in series; and
the second battery comprises at least two separate battery housings electrically connected in series.
49. (previously amended) The vehicle of claim 47 wherein the second battery is a lithium ion battery.
50. (cancelled)
51. (previously presented) A vehicle comprising:
a vehicle housing;
a motor structured and located so that operation of the motor can drive the vehicle into motion, with the motor comprising a regenerative braking portion structured to supply electrical power through regenerative braking;
a first battery having a first energy density, with the first battery being rechargeable;

a second battery having a second energy density, with the second energy density being greater than the first energy density;

a battery connection device structured and located to electrically connect each of the first battery and the second battery to the motor and the second battery is parallel, whereby the first and second batteries can both supply electrical energy to the motor through the parallel connection, and whereby the first and second batteries can both receive electrical energy from regenerative braking portion of the motor through the parallel connection.